



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,135	08/28/2003	Tetsuro Hamada	00682P0072US	6331
32116 7590 03/28/2008 WOOD, PHILLIPS, KATZ, CLARK & MORTIMER 500 W. MADISON STREET SUITE 3800 CHICAGO, IL 60661				
EXAMINER MILLER, CARL STUART				
ART UNIT		PAPER NUMBER		
3747				
MAIL DATE		DELIVERY MODE		
03/28/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary****Application No.**

10/650,135

**Applicant(s)**

HAMADA ET AL.

**Examiner**

Carl S. Miller

**Art Unit**

3747

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 3-26 and 29-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-26 and 29-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

Art Unit: 3747

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-4, 6-15, 17 and 21-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan ('141) in view of Kessler and Maisch ('487).

Japan ('141), at Figures 1 and 2, teaches the overall system now claimed including the solenoid-operated spill valve in the fuel return line. No casing for the valve is shown however the structure includes both a check valve on the inlet to the valve and an accumulator upstream of the valve. A valve body is moveably guided relative to a valve housing.

Kessler applies as per the rejection of Claim 1 in the last office action and further teaches an inlet fitting for the valve on the side of the casing of the valve. Also, a seal is shown that would imply some type of outlet fitting on the case to feed the fuel into the manifold.

Maisch teaches a continuous injection system using a periodically actuated spill valve that spills fuel from the injection means and returns it to a low pressure area in order to control the quantity of fuel being injected from the injector (see column 3, lines 25-34).

It would have been obvious to modify Japan ('141) by using a top fed injector as the spill valve in the return line since the spill valve of Japan functioned as the injector of Kessler functions and both were used in fuel injection control situations and to operate

the spill valve intermittently as taught by Maisch, since Maisch taught that the use of an intermittently operated valve was effective as a way to reduce fuel pressure and regulate the output of a continuous injection system.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kessler, Maisch and Japan ('141) as applied to claim 1 above, and further in view of Mizushima.

Mizushima teaches the use of a grommet (412) located between two casing members for an injector wherein each casing piece includes an indentation to locate the grommet when the casing halves are put together.

It would have been obvious to modify Japan ('141) as noted above and to locate the wiring to the injector as taught by Mizushima because the latter was also an intermittent injector located within a casing having two halves.

Claims 16 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan ('141), Maisch and Kessler as applied to claim 13 above, and further in view of Smith

Smith teaches the use of a vibration-isolating sleeve on an injector and the sleeve obviously has a stronger elastic force than a simple O-ring seal would have since it would not serve to isolate the injector from engine vibrations if it did not.

It would have been obvious to isolate the injector tip of Kessler as taught by Smith since vibrations from the engine would have been a problem even though the injection was manifold injection.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant's arguments filed March 3, 2008 have been fully considered but they are not persuasive. In particular, the examiner has reviewed the translation of Japan ('141) and the affidavit provided and has decided to withdraw the Final Rejection based upon these documents. Unfortunately, the newly applied reference to Maisch teaches that it had been known for many years that an intermittently operated valve could be used on a continuous injection system to provide pressure control in order to vary the output of the continuous injector. Thus, even if the valve (20) of Japan ('141) is a proportional valve that never closes, it would have been obvious to one of ordinary skill in the art to use the Maisch spill valve in the return line since the valve was being used to produce its established function with predictable results.

Finally, the rejection of Claims 35-38, inadvertently omitted from the last office action, has now been included herein.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carl S. Miller whose telephone number is 703-308-2653. The examiner can normally be reached on MTWTHF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Cronin, can be reached at 571-272-4536. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 3747

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Carl S. Miller/  
Primary Examiner  
Art Unit 3747